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WILLIAM J. SAPONE COLEMAN SUDOL SAPONE P.C. 714 COLORADO AVENUE BRIDGE PORT, CT 06605				
EXAMINER				
FORD, JOHN K				
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ALBERT BAUER

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Appeal 2008-6261  
Application 08/998,507  
Technology Center 3700

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Decided: <sup>1</sup>March 19, 2009

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*Before:* WILLIAM F. PATE, III, JOHN C. KERINS, and  
STEVEN D.A. McCARTHY, *Administrative Patent Judges.*

McCARTHY, *Administrative Patent Judge.*

DECISION ON APPEAL

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<sup>1</sup> The two month time period for filing an appeal or commencing a civil action, as recited in 37 CFR § 1.304 (2008), begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or the Notification Date (electronic delivery).

STATEMENT OF THE CASE

The Appellant appeals under 35 U.S.C. § 134 (2002) from the final rejection of claims 44-46 and 51-59. Oral hearing was held on January 13, 2009. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

We AFFIRM.<sup>2</sup>

Claim 44 is the sole independent claim on appeal. The claim recites an air conditioning apparatus including “means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature.” The Appellant agrees that this limitation must be interpreted as provided in 35 U.S.C. § 112, ¶ 6 (2002). (Response to Order Under 37 CFR 41.50(d) at 1).

The Examiner rejects:

claims 44 and 51-59 under 35 U.S.C. § 102(b) (2002) as being anticipated by Johannsen (US 4,257,318, issued Mar. 24, 1981);

claims 44 and 51-59 under 35 U.S.C. § 103(a) as being unpatentable over Johannsen and Rayburn (US 5,971,067, issued Oct. 26, 1999);

claim 45 under § 103(a) as being unpatentable over Johannsen and Benton (US 4,347,712, issued Sep. 7, 1982) or, in the alternative, over Johannsen, Rayburn and Benton; and

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<sup>2</sup> This application has been the subject of two prior Board actions. On June 9, 2006, a prior panel of the Board in Appeal No. 2006-0278 issued an Order Under 37 CFR § 41.50(d) requiring the Appellant to address issues relating to the interpretation of the “means for regulating an increase in pressure . . .” limitation. On October 31, 2006, the prior panel remanded Appeal No. 2006-0278 to the Examiner [“Remand”].

claim 46 under § 103(a) as being unpatentable over  
Johannsen and Robinson (US 4,189,094, issued Feb. 19, 1980)  
or, in the alternative, over Johannsen, Rayburn and Robinson.

### ISSUES

With respect to the rejections of claims 44 and 51-59, the Appellant contends that Johannsen fails to disclose regulating an increase in pressure in at least one room relative to an outside pressure, to vary the room pressure in correspondence to a selected room temperature. (App. Br. 6). The Appellant further contends that the teachings of Johannsen and Rayburn together would not have suggested performing this function. (App. Br. 8-9). The Appellant argues the rejections of claims 45 and 46 under separate headings, merely contending that Benton and Robinson would not have suggested performing this function, either. (See App. Br. 9-11).

This appeal turns on two issues:

Has the Appellant shown that the Examiner erred in finding that Johannsen discloses “means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature?”

Has the Appellant shown that the Examiner erred in concluding that Johannsen and Rayburn would have suggested an air-conditioning apparatus including “means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature?”

FINDINGS OF FACT

The record supports the following findings of fact (“FF”) by a preponderance of the evidence.

1. Johanssen discloses a multiple blower air distribution system including a supply blower 10 and a return blower 11. (Johanssen, col. 4, ll. 20-23).

2. Johanssen’s supply blower 10 supplies air to a distribution duct 20. (Johanssen, col. 4, ll. 31-35).

3. Johanssen’s duct 20 branches to a number of outlets throughout the building for distribution of the air. (Johanssen, col. 4, ll. 36-38).

4. Johanssen’s duct branches 20a and 20b lead to damper control boxes 21a and 21b. (Johanssen, col. 4, ll. 38-41).

5. Johanssen’s damper control boxes 21a and 21b are thermostatically operated by separate thermostats in the zones or rooms with which their air discharge is associated. (Johanssen, col. 4, ll. 41-44).

6. Rayburn discloses a building climate control system including zone dampers controlled by thermostat controllers. (Rayburn, col. 4, ll. 45-47 and col. 7, ll. 1-4).

7. The thermostat controller in each zone of Rayburn’s building climate control system includes a heat setpoint and a cool setpoint. The temperature of each zone is measured by a zone thermistor. If a zone thermistor indicates that the temperature in the zone is below the heat setpoint, then the controller for that zone makes a request for heat. If the zone temperature is above the cool setpoint, then the zone controller makes a request for cool air. (Rayburn, col. 7, ll. 4-12).

8. A zone controller makes a request for heat or cool air by opening a zone damper. (Rayburn, col. 7, ll. 21-23).

#### PRINCIPLES OF LAW

A claim under examination is given its broadest reasonable interpretation consistent with the underlying specification. *In re American Acad. of Science Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). In the absence of an express definition of a claim term in the specification, the claim term is given its broadest reasonable meaning in its ordinary usage as the term would be understood by one of ordinary skill in the art. *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007); *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Limitations not explicit or inherent in the language of a claim cannot be imported from the specification. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003).

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, ¶ 6 (2002). In order to meet a “means-plus-function” limitation, the prior art must (1) perform the identical function recited in the means limitation and (2) perform that function using the structure disclosed in the specification or an equivalent structure. *Cf. Carroll Touch Inc. v. Electro Mechanical Sys. Inc.*, 15 F.3d 1573, 1578 (Fed. Cir. 1994); *Valmont Indus. Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1042 (Fed. Cir. 1993);

1 *Johnson v. IVAC Corp.*, 885 F.2d 1574, 1580 (Fed. Cir. 1989). Structure  
2 described in a specification corresponds to a “means-plus-function”  
3 recitation if the specification clearly links or associates the structure to the  
4 recited function. *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424  
5 (Fed. Cir. 1997). A structure shown in the prior art may be equivalent to a  
6 corresponding structure described in a specification if the structure in the  
7 prior art performs the identical function recited in the “means-plus-function”  
8 limitation in substantially the same way as the corresponding structure with  
9 substantially the same result. *Kemco Sales, Inc. v. Control Papers Co.*, 208  
10 F.3d 1352, 1364 (Fed. Cir. 2000).

11 “To anticipate a claim, a prior art reference must disclose every  
12 limitation of the claimed invention, either explicitly or inherently.” *In re*  
13 *Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). A claim is unpatentable  
14 for obviousness under 35 U.S.C. § 103(a) if “the differences between the  
15 subject matter sought to be patented and the prior art are such that the  
16 subject matter as a whole would have been obvious at the time the invention  
17 was made to a person having ordinary skill in the art to which said subject  
18 matter pertains.” In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the  
19 Supreme Court set out factual inquiries to be considered in determining  
20 whether claimed subject matter would have been obvious:

21  
22 Under § 103, the scope and content of the prior art  
23 are to be determined; differences between the prior  
24 art and the claims at issue are to be ascertained;  
25 and the level of ordinary skill in the pertinent art  
26 resolved. Against this background, the  
27 obviousness or nonobviousness of the subject  
28 matter is determined.  
29

1 *Id.*, 383 U.S. at 17.

2  
3 ANALYSIS

4 The first step in addressing the issues in this appeal is to interpret the  
5 “means for regulating an increase in pressure in the at least one room  
6 relative to an outside pressure, to vary the room pressure in correspondence  
7 to the selected room temperature” limitation. The Appellant’s Specification<sup>3</sup>  
8 discloses a multi-room air-conditioning system (Spec. 15, ll. 20-21)  
9 including a supply air motor in a supply air channel and an exhaust air motor  
10 in an exhaust air channel (*id.* 16, ll. 16-21). The Specification further  
11 discloses that:

12  
13 With air-conditioning for several rooms, the heated  
14 supply air is made available through a common  
15 supply air channel. In the case of different desired  
16 and actual temperatures of all the rooms, however,  
17 each room has a different heating requirement. In  
18 order to take this circumstance into account,  
19 according to a further form of execution of the  
20 invention, in the simultaneous air-conditioning of  
21 several rooms or room zones, the individual rooms  
22 or room zones are connected in each case through  
23 a supply air and an exhaust air line allocated to  
24 them from the central supply air and exhaust air  
25 channels, and in the individual supply air and/or  
26 exhaust air lines, throttle valves are arranged  
27 through which the channel pressure of the supply  
28 air is adjusted in the rooms or room zones.  
29

30 (Spec. 8, ll. 5-14).

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<sup>3</sup> All references to the Appellant’s Specification are to the substitute Specification filed April 9, 2001.



1           The Appellant has advanced a broad interpretation of the “means for  
2   regulating an increase in pressure . . . .” At one point, the Appellant  
3   contended that:

4  
5           [t]he regulators, controllers, temperature and  
6   pressure sensors, valves, motor controls, etc, are  
7   structures that may be used to perform the function  
8   specified, in various combinations, arranged for  
9   utilizing room temperature as a control signal for  
10   effecting pressure variations in a room. Various  
11   ways of varying the room pressure are discussed in  
12   the specification, such as by varying the supply air  
13   motor speed, *opening or closing a throttle valve to*  
14   *supply more or less air to the room*, opening or  
15   closing an exit valve, controlling both valves if  
16   both are present, or by varying the speed of an  
17   exhaust air motor, if one is used.  
18

19   (Response to Order Under 37 CFR 41.50(d) at 5 (emphasis added)). The  
20   Appellant in the Reply Brief discussed only one asserted corresponding  
21   structure, namely, a  $P_{ZU\ SOLL}$  [desired supply air pressure] value calculation  
22   200. (*See* Reply Br. 11, citing Spec., Figs. 2 and 10). During oral argument,  
23   however, the Appellant explained that:

24  
25           APJ: What structure is disclosed in the  
26   Specification for carrying out that function?  
27

28           MR. SAPONE: Yeah, I believe that was  
29   described in the Reply Brief. There’s Figures 2  
30   and 10 that describe the various elements that are  
31   involved in the control system and also what  
32   you’re going to be using to do that. You have the  
33   temperature, heating valve for adding hot air. You  
34   have a pressure controller that also is going to

1 control the pressure, and you've got several  
2 components here which are in the system which  
3 allow you to change the pressure when there's a  
4 change in temperature.  
5

6 Now that can be -- getting into specifics,  
7 yes, you could have a supply fan that you can  
8 increase the speed on if you want to increase  
9 pressure. *You could have control dampers, which*  
10 *are valves which allow more or less air into the*  
11 *room.* You also have controls on the outside,  
12 possibly a damper.  
13

14 (Record of Oral Hearing 4, ll. 4-16 (emphasis added)). In other words, the  
15 Appellant has advanced an interpretation of the "means for regulating an  
16 increase in pressure . . ." broad enough to include the throttle valves 60 and  
17 the valves' regulating circuits as shown in Fig. 5 as corresponding structures.

18 The Examiner concludes that the "means for regulating an increase in  
19 pressure . . ." corresponds to "the combined action of the supply fan control  
20 and the exhaust fan control and the thermostat that opens and closes  
21 corresponding throttle control valve 60." (Supp. Ans. 4). More specifically,  
22 the Examiner finds that the circuitry regulating the exhaust fan performs the  
23 function of regulating an increase in pressure in the at least one room  
24 relative to an outside pressure while the circuitry controlling the throttle  
25 valve performs the function of varying the room pressure in correspondence  
26 to the selected room temperature. (Supp. Ans. 7).

27 The throttle valves 60 and the valves' control circuits as shown in Fig.  
28 5 of the Specification correspond to the "means for regulating an increase in  
29 pressure in the at least one room relative to an outside pressure, to vary the  
30 room pressure in correspondence to the selected room temperature." The

1 supply air motor, the exhaust motor and their control circuits do not  
2 correspond to the “means for regulating an increase in pressure . . .” in a  
3 multi-room air-conditioning system. As a prior panel of this Board pointed  
4 out (Remand 3), Fig. 2 indicates that the “ $P_{ZU\ SOLL}$  value calculation” 200  
5 results in a signal which controls the supply air motor to regulate increases  
6 in the actual pressure  $P_{ZU\ IST}$  in the supply air channel, not increases in the  
7 room pressures. It is through the throttle valves 60 that “the channel  
8 pressure of the supply air is adjusted in the rooms or room zones.” (Spec. 8,  
9 ll. 8-15).

10 The throttle valves 60 and the valves’ control circuits regulate an  
11 increase in pressure in the at least one room relative to an outside pressure,  
12 to vary the room pressure in correspondence to the selected room  
13 temperature. The Examiner is correct in finding (*see* Supp. Ans. 6) that  
14 opening a throttle valve 60 will cause a transient increase in room pressure,  
15 however small and short-lived. This increase in room pressure will be  
16 regulated by the circuitry which controls the opening of the throttle valve.  
17 Since the opening or closing a throttle valve is unlikely to have any  
18 immediate effect on the outside air pressure, the room pressure in the at least  
19 one room will increase relative to the outside pressure when the throttle  
20 valve opens without separate action by the supply air motor or the exhaust  
21 motor.

22 The throttle valves 60 of the multi-room air-conditioning system are  
23 regulated to vary the room pressure “in correspondence to” the desired  
24 temperature value  $T_{RAUM\ SOLL}$  of each room individually by a comparator 310  
25 and the regulator 320. (Spec. 22, l. 25 – 23, l. 1 and Fig. 5). The Appellant  
26 points to no definition of the term “in correspondence to” in the

1 Specification. A previous panel of this Board found that the term “in  
2 correspondence to” is sufficiently broad to include “as a function of.”  
3 (Remand 3). The comparator 310 compares the selected room temperature  
4  $T_{\text{SOLL N}}$  with the actual temperature  $T_{\text{IST N}}$  of the room and supplies a signal  
5 representing the difference of the two temperatures to the regulator 320. The  
6 regulator 320 generates a control signal on the basis of the difference of the  
7 selected room temperature  $T_{\text{SOLL N}}$  and the actual temperature  $T_{\text{IST N}}$  of the  
8 room which the regulator 320 feeds to the throttle valve 60. In other words,  
9 the comparator 310 and the regulator 320 together generate a control signal  
10 for the throttle valve 60 in correspondence to (that is, as a function of) the  
11 difference between the selected room temperature  $T_{\text{SOLL N}}$  and the actual  
12 temperature  $T_{\text{IST N}}$  of the room.

13 Although the Examiner interpreted the structure corresponding to the  
14 “means for regulating an increase in pressure . . .” more narrowly, including  
15 not only the throttle valves 60 and the valves’ control circuits but also the  
16 supply fan control and the exhaust fan control in the structure, the  
17 Examiner’s findings nonetheless support a determination that Johannsen  
18 discloses “means for regulating an increase in pressure . . . .” Johannsen  
19 discloses a multiple blower air distribution system including a distribution  
20 duct or supply air channel and duct branches. (FF 1-3). Each duct branch  
21 leads to a damper control box. (FF 4). The damper control boxes are  
22 thermostatically operated by separate thermostats in the zones or rooms with  
23 which their air discharge is associated. (FF 5).

24 Johannsen’s thermostatically operated damper control boxes vary the  
25 room pressure in correspondence to the selected room temperature in  
26 substantially the same way as the throttle valves 60 and the valves’ control

1 circuitry as disclosed in the Appellant's Specification. A thermostat  
2 generates a control signal when the actual temperature is no less than (or no  
3 greater than) a setpoint temperature and ceases to generate the control signal  
4 when the actual temperature is less than (or greater than) a setpoint  
5 temperature. In other words, the thermostat acts as a regulator which  
6 compares the setpoint temperature to the actual temperature of the room and  
7 generates a control signal which is a function (albeit a step function) of the  
8 difference between the setpoint and the actual temperature of the room. A  
9 thermostatically operated damper control box opens or closes in response to  
10 the control signal generated by the thermostat to regulate an increase in  
11 pressure in at least one room relative to an outside pressure, to vary the room  
12 pressure in correspondence to the selected room temperature. Both  
13 Johannsen's thermostatically operated damper control boxes and the throttle  
14 valves 60 of the Specification produce substantially the same result, namely,  
15 pressure variations (albeit transient) in correspondence to the selected room  
16 temperature.

17 Johannsen's thermostatically operated damper control boxes do not  
18 vary the room pressure on the basis of supply air temperature and pressure as  
19 the throttle valve 60 and the regulator 320 appear to do. While this arguably  
20 represents a difference between the way in which the throttle valves 60 and  
21 the valves' control circuitry regulate increases in pressure and the way that  
22 the thermostatically operated damper regulates pressure increases, the  
23 difference is not substantial. The function associated with the "means-plus-  
24 function" limitation includes varying the room pressure in correspondence to  
25 the selected room temperature but does not include varying the room  
26 pressure in correspondence to supply air temperature or pressure. Since



The Appellant has not shown that the Examiner erred in concluding that Johannsen and Rayburn would have suggested an air-conditioning apparatus including “means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature.” Therefore, the Appellant has not shown that the Examiner erred in rejecting claims 44 and 51-59 under § 103(a) as being unpatentable over Johannsen and Rayburn.

The Appellant's only arguments directed against the rejections of claim 45 and 46 under § 103(a) were that Benton and Robinson failed to remedy perceived deficiencies in the teachings of Johannsen and Rayburn. Since the rejections of claims 44 and 51-59 under § 102(b) as being anticipated by Johannsen and under § 103(a) as being unpatentable over Johannsen and Rayburn are sustained, the Appellant has not shown that the Examiner erred in rejecting claim 45 under § 103(a) as being unpatentable over Johannsen and Benton or, in the alternative, over Johannsen, Rayburn and Benton. Likewise, the Appellant has not shown that the Examiner erred in rejecting claim 46 under § 103(a) as being unpatentable over Johannsen and Robinson or, in the alternative, over Johannsen, Rayburn and Robinson.

## DECISION

We AFFIRM the rejections of claims 44-46 and 51-59.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a) (2007). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

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10 LV;

11

12 WILLIAM J. SAPONE  
13 COLEMAN SUDOL SAPONE P.C.  
14 714 COLORADO AVENUE  
15 BRIDGEPORT, CT 06605